

Ithildin Proposer's Day Brief

Dr. Kristy DeWitt, Program Manager
Intelligence Advanced Research Projects Activity



Office of the Director of National Intelligence

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Agenda

Time	Topic	Speaker
8:00am – 9:00am	Arrival, Badging	
9:00am – 9:15am	Logistics, Proposer's Day Goals	Dr. Kristy DeWitt Program Manager
9:15am – 9:30am	IARPA Overview	Dr. Lee Knauss Chief, Technology Transition
9:30am – 10:00am	Ithildin Technical Overview	Dr. Kristy DeWitt
10:00am – 10:20am	Ithildin BAA Overview	Dr. Kristy DeWitt
10:20am – 10:30 am	Break	
10:30am – 11:10am	T&E Team Background Presentations	T&E Team
11:10am – 11:30am	Doing Business with IARPA	IARPA Acquisitions
11:30am – 11:40am	Break	
11:40am – 12:00pm	Q&A Session	
12:00pm – 1:00pm	Lunch – on your own	
1:00pm – 2:00pm	5 Minute Capability Presentations	Attendees (No Government)
2:00pm – 4:00pm	Poster Session and Teaming Discussions	Attendees (No Government)



Announcements / Facilities

- Restrooms
- Food/drink rules in room
- Lunch is on your own



Disclaimer

- This Proposers' Day Conference is provided solely for information and planning purposes.
- The Proposers' Day Conference does not constitute a formal solicitation for proposals or proposal abstracts.
- Nothing said at Proposers' Day changes the requirements set forth in a Broad Agency Announcement (BAA).



Proposer's Day Goals

- Familiarize participants with IARPA's interest in development of novel sorbent capabilities.
- Familiarize participants with IARPA's mission and how to do business with IARPA.
- Provide answers to participants' questions.
 - This is your chance to alter the course of events.
- Foster discussion of synergistic capabilities among potential program participants, i.e., facilitate teaming.
 - Take a chance – someone might have a missing piece of your puzzle.



Important Points

- Draft BAA is posted on FedBizOpps – open for comment until June 14.
- Proposers' Day slides are posted on iarpa.gov.
- Please save questions for the end, write on notecards.
- Posters are available for browsing during breaks/lunch.
- Government will not be present during the presentations or poster/teaming session.
- Discussions with PM allowed until BAA release.
 - Once BAA is published, questions can only be submitted and answered in writing via the BAA guidance.
- Name/email list of Proposers' Day participants provided to the group **with permission.**

IARPA Overview

**Dr. Lee Knauss, Chief, Technology Transition
Intelligence Advanced Research Projects Activity**



Office of the Director of National Intelligence

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The United States Intelligence Community





IARPA Mission

IARPA envisions and leads *high-risk, high-payoff research* that delivers innovative technology for future *overwhelming intelligence advantage*

- Our problems are **complex** and **multidisciplinary**
- We emphasize **technical excellence** & **technical truth**



IARPA Method

Bring the best minds to bear on our problems

- Full and open competition to the greatest possible extent
- World-class, rotational Program Managers

Define and execute research programs that:

- Have goals that are clear, measureable, ambitious and credible
- Employ independent and rigorous Test & Evaluation
- Involve IC partners from start to finish
- Run from three to five years
- Publish peer-reviewed results and data, to the greatest possible extent
- Transition new capabilities to intelligence community partners



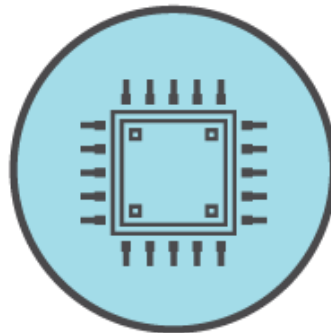
4 Core Research Thrusts



Collection



Analysis



Computing



Anticipatory
Intelligence



Collection R&D



“Dramatically improve the value of collected data”



NOVEL ACCESS

Reach hard targets in denied areas



ASSET VALIDATION AND IDENTITY INTELLIGENCE

Assess trustworthiness and advance biometrics in real-world conditions



LOCATING, TRACKING AND DETECTING

Accurately locate and track intelligence interests and detect CBRNE agents



Analysis R&D



“Maximize insight from the information we collect, in a timely fashion”



LARGE DATA VOLUMES AND VARIETIES

Provide powerful new sources of information from massive, noisy data



SOCIAL, CULTURAL, AND LINGUISTIC FACTORS

Analyze language and speech to produce insights into groups and organizations

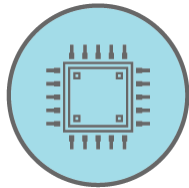


IMPROVING ANALYTIC PROCESSES

Enhance analytic process at the individual and group level



Computing R&D



“Operate effectively in a globally interdependent and networked environment”



COMPUTATIONAL POWER

Revolutionary advances to solve problems intractable with today's computers



TRUSTWORTHY COMPONENTS

Gain the benefits of leading-edge hardware and software without compromising security



SAFE AND SECURE SYSTEMS

Protecting systems against cyber threats



Anticipatory Intelligence R&D



“Detect and forecast significant events”



S & T INTELLIGENCE

Detect and forecast the emergence of new technical capabilities



INDICATIONS & WARNINGS



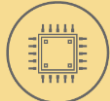

Provide early warning of societal crises, disease outbreaks, insider threats, and cyber attacks



STRATEGIC FORECASTING

Forecast major geopolitical trends and rare events



	 Collections	 Analysis	 Computing	 Anticipatory Intelligence
Completed	BIC (biosecurity) GHO (quiet UAV) TRUST (polygraphy)	BEST (facial recog) ICaRUS (neuroscience) KDD (information discovery) METAPHOR (linguistics) Reynard (virtual worlds) SCIL (socio-linguistics) SHO (holography) Sirius (training)	ATHENA (cybersecurity) CAT (circuit analysis) CSQ (quantum) MQCO (quantum) QCS (quantum) SPAR (privacy) STONESOUP (security)	ACE (collective forecasts) ForeST (S&T intel) OSI (OSINT forecasting)
Execution	HFGeo (HF geolocation) MAEGLIN (CBRN) Odin (biometrics) SILMARILS (chem detection) SLICE (RF tracking)	Aladdin (video search) Babel (speech recognition) Finder (geolocate imagery) Janus (facial recog) KRNS (neuroimaging) SHARP (training)	C3 (cryogenic computing) LogiQ (quantum) MICrONS (neuromorphic) RAVEN (chip analysis) TIC (chip security)	CAUSE (cyber forecasting) CREATE (crowdsourcing) FUSE (S&T intel) Mercury (SIGINT forecasting) SCITE (insider threats)
In Source Selection	UnderWatch (undersea) MOSAIC (pattern of life)	CORE3D (3D modeling) DIVA (surveillance video) MATERIAL (translation)	QEO (quantum) SuperTools (cryogenic) VirtUE (cloud security)	FunGCAT (synthetic bio) HFC (hybrid forecasting)
In Development	Amon-Hen (space awareness) Ithildin (chem detection) Proteos (ID via proteins)			
<div> <div></div> <div>Seedlings and Studies</div> <div></div> </div>				

Last updated
23 May 2017



Current IARPA Opportunities

- Nail to Nail (N2N) prize challenge
- Face Recognition prize challenges

OPEN OPPORTUNITIES

PRESENT

FUTURE

UPCOMING OPPORTUNITIES

- Amon-Hen (space awareness)
- Ithildin (chem detection)
- Proteos (identification via proteins)
- MORGOTH'S CROWN prize challenge
- Functional Map of the World prize challenge

Last updated
23 May 2017



IARPA does everything “from AI to Zika” and is a world scientific leader

Although best known for quantum computing, superconducting computing and forecasting tournaments – IARPA’s research portfolio is diverse, including math, physics, chemistry, biology, neuroscience, linguistics, political science, cognitive psychology and more.

- 70% of completed research transitions to U.S. Government partners
- 2,000+ journal articles published through FY2016
- Physicist David Wineland won the Nobel Prize in Physics for quantum computing research funded by IARPA
- World’s leading funder of quantum computing academic research, and quantum research cited as Science Magazine’s “Breakthrough of the Year”
- White House BRAIN Initiative, National Strategic Computing Initiative
- Dr. Craig Gentry named a MacArthur Fellow



IARPA in the News

“One of the government’s most creative agencies, the Intelligence Advanced Research Projects Agency...”

David Brooks, NYT, “Forecasting Fox”
21 March 2013

“All the News
That’s Fit to Print”

The New York Times

VOL. CLXII .. No. 56,090

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NEW YORK, FRIDAY, MARCH 29, 2013





How to Engage with IARPA

Getting Started with IARPA

At IARPA, we take real risks, solve hard problems, and invest in high-risk/high-payoff research that has the potential to provide our nation with an overwhelming intelligence advantage.

Are you interested in partnering with us to advance the state-of-the-art in research and development?

[Read More](#)

iarpa.gov | 301-851-7500

info@iarpa.gov

Reach out to our Program Managers.

Schedule a visit if you are in the DC area or invite us to visit you

Opportunities to Engage:

RFIS AND WORKSHOPS

Opportunities to learn what is coming, and to influence programs.

"SEEDLINGS"

Typically a 9-12 month study; you can submit your research proposal at any time. We strongly encourage informal discussion with a PM before proposal submission.

PRIZE CHALLENGES

No proposals required. Submit solutions to our problems – if your solutions are the best, you receive a cash prize and bragging rights.

RESEARCH PROGRAMS

Multi-year research funding opportunities on specific topics.

Itchildin Technical Overview

Dr. Kristy DeWitt, Program Manager
Intelligence Advanced Research Projects Activity



Office of the Director of National Intelligence

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What's in a Name?

- Ithildin was a substance made by the Elves out of the metal mithril and used in constructions such as gateways. Ithildin could only be seen by the reflected light of the Moon and stars and even then remained hidden until a "magic" word was said. The designs on the Doors of Durin were made from this substance.
- The Ithildin program similarly seeks to develop materials with special properties...





Ithildin Program Goal

- Develop novel sorbent materials for chemical sampling and storage, providing enhanced capabilities at the molecular, nanoscale and mesoscale level, independent of the sampler design

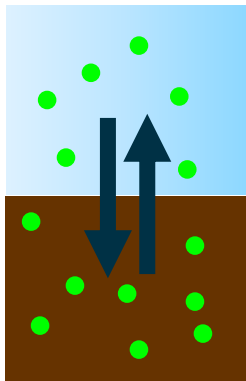
- Sor•bent
 - NOUN | [sôr•bənt]
 - *Chemistry*
 - A substance that has the property of collecting molecules of another substance by sorption



Ithildin Program Goals

- Develop novel sorbent materials for chemical sampling and storage, providing enhanced capabilities at the molecular, nanoscale and mesoscale level, independent of the sampler design

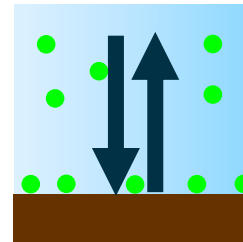
Absorbants



$$K = \frac{C_{\text{absorbent}}}{C_{\text{gas}}}$$

Gas Partition coefficient

Adsorbants



$$K_H = \frac{C_{\text{adsorbent}}}{C_{\text{gas}}}$$

Henry's constant

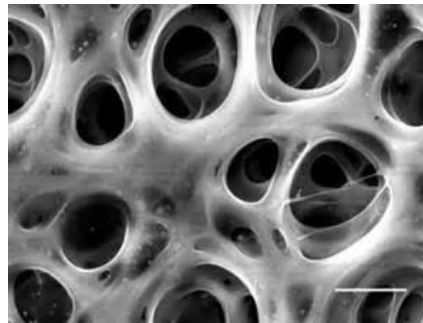
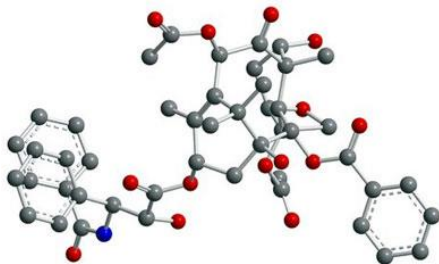


Ithildin Program Goals

- Develop novel sorbent materials for chemical sampling and storage, providing enhanced capabilities at the molecular, nanoscale and mesoscale level, independent of the sampler design

Molecular

- Sorbent chemistry
- Functionalization

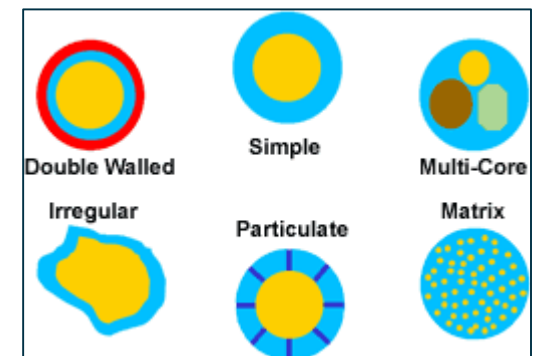


Nanoscale

- Pore size
- Crystalline framework
- Structure of substrate

Mesoscale

- Heterostructures
- Encapsulation





Current Technology

- Sorbents trap the chemicals they are designed to trap when they are exposed to these chemicals, until the sorbent capacity is exhausted
- Functionality beyond binary “trap to capacity” capability is left for design of the sampler, scrubber, or filter that the sorbent is a component of
- Broad spectrum sorbents:
 - Sorb all impinging compounds within a certain molecular weight fraction or polarity range
 - Sorption is typically reversible, with thermal desorption as a common method of release/cleaning
 - Commonly employ physical sorption interactions such as high porosity
- Selective sorbents:
 - Preferentially sorb certain chemicals or chemical classes
 - Low binding for common background gases and contaminants
 - Binding can be reversible or irreversible (including covalent or catalytic), and depend on either physical or chemical interactions



4 Capability Thrust Areas

- **Selective Sorption Enhancement** - Preferential adsorption of target chemicals or chemical classes or interest, while retaining the capability to collect broad-spectrum background
 - **Clutter Rejection** - Preferential rejection of high-abundance clutter materials, such as water or hydrocarbons
 - **Temporal Fidelity** - Capability to activate/deactivate the sorbent material based on mechanical, physical or temporal triggers
 - **Remote Indicators** - A remotely detectable signature indicative of adsorption of a specific target or target class
- historic sorbent domain
- historic sampler domain



Program Focus

- Ithildin goal is development of a broad “toolkit” of new sorbent capabilities that can enable many IC applications in the chemical sampling / sensing / collection domain
 - Metrics are geared to maximize innovation and technical advancement, not to target a specific application
 - IC applications are always the core motivation for IARPA programs, but new science can also enable DoD and commercial applications
 - The following slides provide a few notional applications based on Ithildin capabilities – not prescriptive or inclusive



What Could Ithildin Enable?

- Scenario 1: Passive sequentially timed sample collection
 - A set of small sorbent canisters or tubes can be deployed together to sequentially sample at timed intervals over hours/days/weeks, followed by collection and analysis of the samples to examine the time-stamped record of captured samples. Provides inexpensive, low-profile detection of temporally varying signatures without deploying an active sensor. Possible applications include:
 - Detection of narcotics production or purification
 - Process monitoring for product quality & release levels
 - Fine-grained hazard monitoring to determine spread and return-to-safe after a chemical attack or toxic chemical release





What Could Ithildin Enable?

- Scenario 2: Large area monitoring / protection
 - Passive sorbent canisters/tubes distributed throughout airports / train stations / stadiums / shopping areas remain inactive until exposed to target chemicals. Upon exposure, sorbent releases a tracer or undergoes a conformation change that is detected by a single central “monitor” unit. The passive sorbent canisters are cheap, long-lived, require no power, and can be easily configured/reconfigured to adapt to the area to be protected.





What Could Ithildin Enable?

- Scenario 3: Safe sampling & decontamination
 - Sorbent activates on exposure to target chemical(s), then strongly binds & reencapsulates targets, or catalytically converts chemicals to stable, non-toxic materials via deterministic pathways. Potential applications include:
 - Capability to sample toxic materials, then safely transport to analysis facility for identification.
 - Self-decontaminating protective clothing
 - Capture and storage of short-lived toxic compounds of interest as stable, deterministic non-toxic products for forensic analysis





What Could Ithildin Enable?

■ Scenario 4: Smart filters

- Sorbent material remains inactive until exposed to target chemical(s). Upon exposure it activates, preferentially adsorbing targets to extend useful life of filter. Potential applications include gas masks, filter masks used in industrial manufacture and paint/chemical jobs, scrubber filters, HEPA filters, etc.





BAA Definitions: Sorbent Taxonomy

Definitions for THIS solicitation:

- **Selectivity:**
 - What is sorbed, and “how much” are certain chemicals preferred
- **Capture**
 - What fraction of the analyte that interacts with the sorbent is captured by the sorbent
- **Retention**
 - Do sorbed analytes “stick” in the sorbent over time (bumping)
- **Stabilization**
 - How well does the sorbent store the analyte
- **Capacity**
 - How much analyte can the sorbent collect
- **Release**
 - How much of the sorbed analyte can be removed and analyzed



Development Scale - Molecular

- Affinity/interaction/binding of sorbent to sorbate
- Controlled by sorbent chemistry, surface functionalization & coating

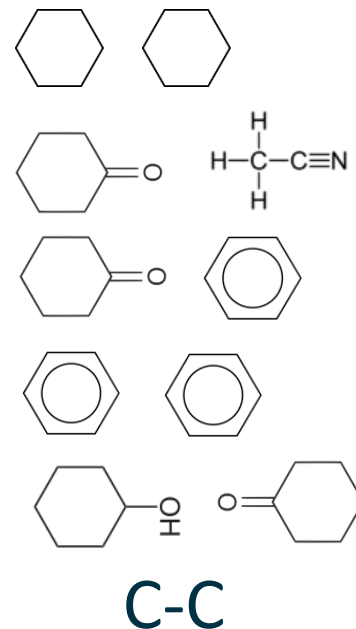
- Examples:

reversible

- London dispersion forces
- Dipole-dipole
- Dipole-induced dipole
- Pi – Pi stacking
- Hydrogen bonds

irreversible

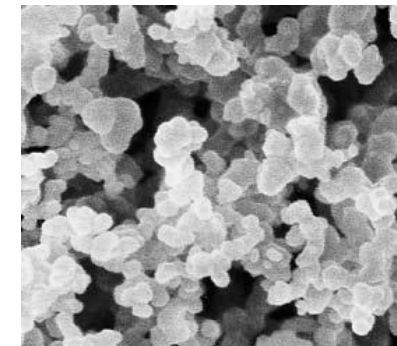
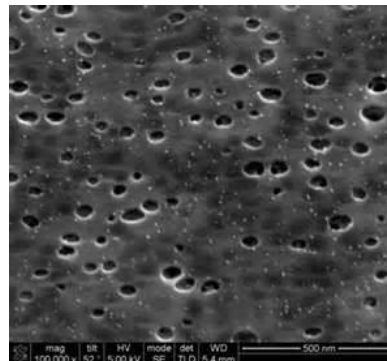
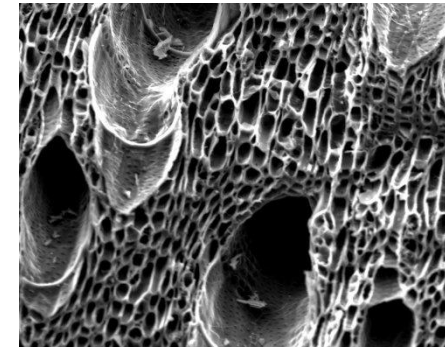
- Covalent bond





Development Scale - Nanoscale

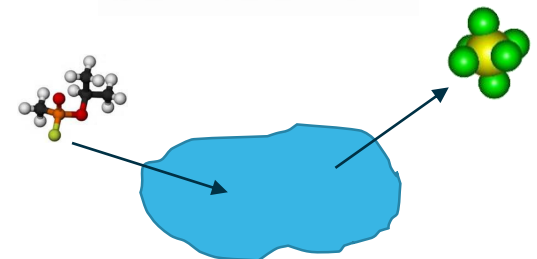
- Pore size & shape
- Rigidity
- Viscosity
- Thickness/path length
 - Capacity
 - Retention
 - Kinetics
- Surface area
 - Capacity
 - Kinetics
- Heterogeneous structures enable mixed chemistry





Development Scale - Mesoscale

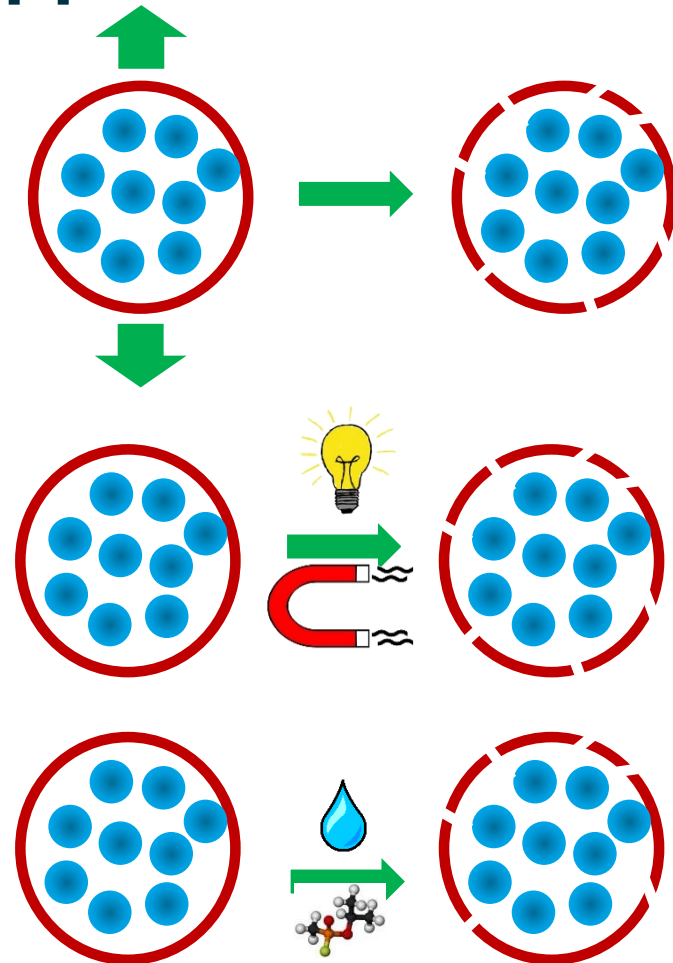
- Encapsulated sorbent material activated by physical action or chem
 - Friction
 - Light
 - Humidity
 - Exposure to target (or other compound)
- ... and then deactivated after a finite elapsed time
- Indication of target sorption provided by measurable change in sorbent physical/chemical properties, or release of a “tracer” substance





Brainstorming Timed Sorption: Some “Start” Approaches

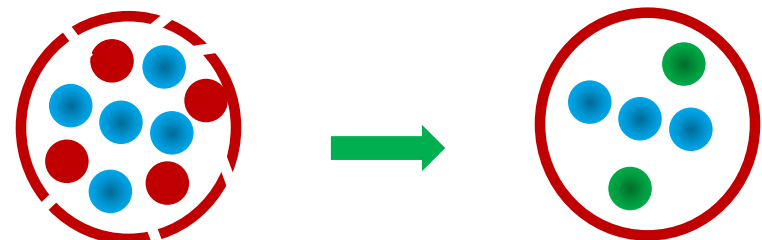
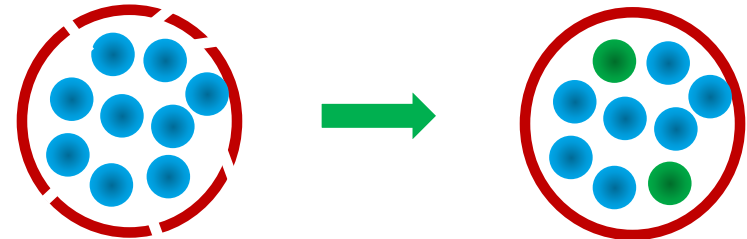
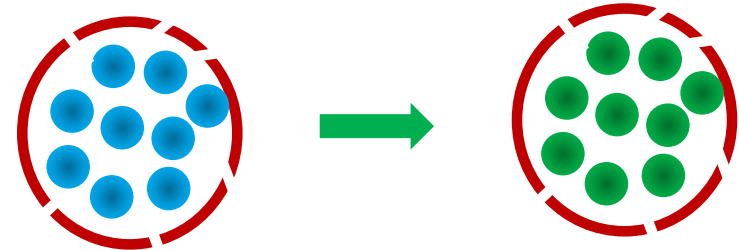
- Sorbent is encapsulated in an outer coating that is breached by:
 - Mechanical force/friction
 - Exposure to radiation (UV/visible/IR)
 - Exposure to electric or magnetic field
 - Water soluble (humidity)
 - **Exposure to target chemical/chemical class or other compound**





Brainstorming Timed Sorption: Some “Stop” Approaches

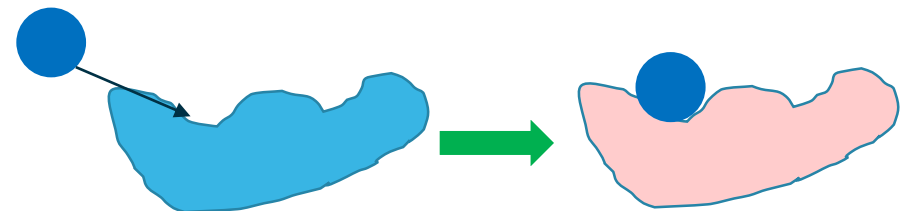
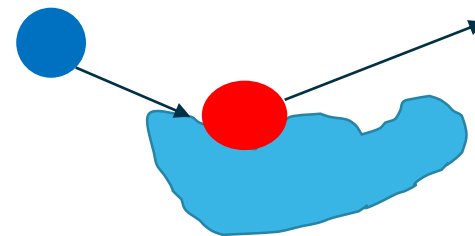
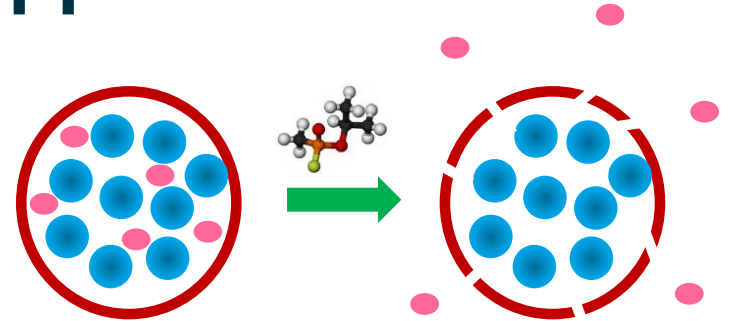
- Bimodal sorbent adsorbs compound of interest and another common molecule such as water, so poisons after a finite time
- Self healing encapsulation
- Reagents co-encapsulated with sorbent that reacts to shut it down, or heal encapsulation





Brainstorming Remote Indicators: Some Possible Approaches

- Tracer molecule (solid/liquid/gas) and sorbent in same outer encapsulation that fails on exposure to target
- Competitive binding of target displaces bound indicator
- Sorbent heterostructure changes color or reflectivity on exposure to target



Ithildin BAA Overview

Dr. Kristy DeWitt, Program Manager
Intelligence Advanced Research Projects Activity



Office of the Director of National Intelligence

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Program Structure

■ Duration: 18 Months

Thrust Area	Selective Adsorption Enhancement	Clutter Rejection	Temporal Fidelity	Remote Indicators
Goals	Preferential adsorption of target chemicals or chemical classes or interest, while retaining the capability to collect broad-spectrum background.	Preferential rejection of high-abundance clutter materials, such as water or hydrocarbons.	Capability to activate/deactivate the sorbent material based on mechanical, physical or temporal triggers.	A remotely detectable signature indicative of adsorption of a specific target or target class.

- Program goal is development of a “toolkit” of smart sorbent options that would be useful for many different scenarios, not a solution to a particular application.



BAA Highlights

- Offeror team must address all of program requirements within a thrust area; no partial proposals, such as development of specific component technology, will be accepted
- The Government anticipates that proposals submitted under this BAA will be unclassified
- Multiple awards are expected
- Foreign participants and/or individuals may participate to the extent that such participants comply with any necessary Non-Disclosure Agreements, Security Regulations, Export Control Laws and other governing statutes applicable under the circumstances



Acceptable Thrust Area Combinations

ACCEPTABLE			UNACCEPTABLE	
Four Areas	Three Areas	Two Areas	Two Areas	One Area
<ul style="list-style-type: none"> Selective Sorption Enhancement Clutter Rejection Temporal Fidelity Remote Indicators 	<ul style="list-style-type: none"> Selective Sorption Enhancement Temporal Fidelity Remote Indicators 	<ul style="list-style-type: none"> Selective Sorption Rejection Temporal Fidelity 	<ul style="list-style-type: none"> Selective Sorption Enhancement Clutter Rejection 	Selective Sorption Enhancement
	<ul style="list-style-type: none"> Selective Sorption Enhancement Clutter Rejection Remote Indicators 	<ul style="list-style-type: none"> Selective Sorption Enhancement Remote Indicators 		Clutter Rejection
	<ul style="list-style-type: none"> Selective Sorption Enhancement Clutter Rejection Temporal Fidelity 	<ul style="list-style-type: none"> Clutter Rejection Temporal Fidelity 	<ul style="list-style-type: none"> Temporal Fidelity Remote Indicators 	Temporal Fidelity
		<ul style="list-style-type: none"> Clutter Rejection Remote Indicators 		Remote Indicators



Metrics – All Thrust Areas

Form Factor	Powder plus one additional form factor of offeror's choosing
Sorbent Capacity	Minimum sorption capacity of 10% w/w of the sorbent
Sorbate Retention	<10% mass loss under exposure to: <ul style="list-style-type: none">• 100 liter per minute N2 flow• 90% relative humidity• 72 hour ambient exposure• 100 torr vacuum
Sorbate Stabilization	>90% of sorbed material retains original chemical state or is derivatized upon sorption to a single predictable state (no decomposition or catalytic reactions)
Release Efficiency	>90% sorbate desorption as usable analyte
Release Method	Thermal desorption preferred, any other proposed release method must be compatible with conventional chemical separation and identification techniques



Metrics – Selective Sorption Enhancement

Broad Sorption Capability	Capture efficiency from C4-C14 within 25% of average broad spectrum capture rate
Selective Sorption Capability	<p>Concentration factor of 10 (threshold) / 100 (goal) over relative ambient exposure for 3 (threshold) / 8 (goal) of the following compounds:</p> <ul style="list-style-type: none">• Ordinance Related Chemicals• Nerve Agents & Simulants• Blister/Choking Agents & Simulants• Cholinesterase Inhibitors• Blood Agents• Chemical Agent Precursors• Toxic Industrial Chemicals



Metrics – Clutter Rejection

Broad Sorption Capability	Capture efficiency from C4-C14 within 25% of average broad spectrum capture rate
Clutter Rejection	<p>Concentration reduction of 10 (threshold) / 100 (goal) over relative ambient exposure for 1 (threshold) / 3 (goal) of the following compounds:</p> <ul style="list-style-type: none">• Water• Hydrocarbons (aliphatic)



Metrics – Temporal Fidelity

Fast Temporal Characteristics	>90% of sorbent active within 2 minutes after trigger <5% of sorbent still active 12 minutes after trigger No more than 10% performance change, tested at 10%, 50%, 90% RH
Slow Temporal Characteristics	>90% of sorbent active within 1 hour after trigger <5% of sorbent still active 6 hours after trigger No more than 10% performance change, tested at 10%, 50%, 90% RH



Metrics – Remote Indicators

Gas Phase Tracer Release	<0.1% tracer release per hour under ambient exposure, no target >90% tracer release within 5 minutes of tracer exposure
Solid Phase Tracer Release	<0.1% tracer release per hour under ambient exposure, no target >90% tracer release within 5 minutes of tracer exposure
Physical Change Tracer	<0.1% of sorbent undergoes physical change per hour under ambient exposure, no target >90% of sorbent undergoes physical change within 5 minutes of tracer exposure



Milestones and Waypoints

- **Milestones** are Government-defined progress metrics that must be met by the end of each phase
- **Waypoints** are offeror-defined, task-driven intermediate steps towards a milestone
 - Depending on an offeror's specific approach, progress towards a milestone is not expected to be linear in all areas
 - Waypoints are how the offeror clearly explains to the Government the quantitative and timely progress that must be made for their overall concept to meet the end-of-phase Milestones – performance against these waypoints is reviewed throughout program
- **Technical reviews** held at months **3, 5, 8, 11, and 14** will quantify progress against the waypoints & assess whether course corrections are needed for success



Anticipated Performance Schedule

Months after Kickoff	5	10	15	17
Selective Adsorption Enhancement	Design complete, selective adsorption proof of concept experiments	Demonstrate selective adsorption at 50% of final performance parameters	Ready for Government Benchmark test	Meet all Phase 1 Milestones
Clutter Rejection	Design complete, clutter rejection proof of concept experiments	Demonstrate clutter rejection at 50% of final performance parameters	Ready for Government Benchmark test	Meet all Phase 1 Milestones
Temporal Fidelity	Design complete, temporal fidelity proof of concept experiments	Demonstrate temporal fidelity at 50% of final performance parameters	Ready for Government Benchmark test	Meet all Phase 1 Milestones
Remote Indicators	Design complete, remote indicator proof of concept experiments	Demonstrate remote indicator trigger at 50% of final performance parameters	Ready for Government Benchmark test	Meet all Phase 1 Milestones



List of Deliverables

Kickoff meeting. Corrected slide package provided within 15 days after meeting date.	1
Washington metro area technical reviews. Corrected slide packages provided within 15 days after meeting date.	5, 15
On-site technical review. Corrected slide package provided within 15 days after meeting date.	10
Benchmark testing at Government T&E Facility.	14
Government Interaction Day.	15
Demonstration of Phase 1 milestones per 1.B.5.	17
System available for independent Government testing.	17
Final report. Format provided upon contract award.	18
Demonstration hardware (1 gram sorbent sample packaged in vacuum sealed container).	18
Monthly technical and financial reports.	Monthly, by 10 th day of following month.

INTELLIGENCE ADVANCED RESEARCH PROJECTS ACTIVITY (IARPA)



References

- Bibliography of example “smart” sorbents:
- Lei Cheng, Yao Jiang, Ni Yan, Shu-Feng Shan, Xiao-Qin Liu, and Lin-Bing Sun*, Smart Adsorbents with Photoregulated Molecular Gates for Both Selective Adsorption and Efficient Regeneration, ACS Appl. Mater. Interfaces 2016, 8, 23404–23411
- Yao Jiang, Peng Tan, Lei Cheng, Shu-Feng Shan, Xiao-Qin Liu and Lin-Bing Sun*, Selective adsorption and efficient regeneration via smart adsorbents possessing thermo-controlled molecular switches, Phys.Chem.Chem.Phys., 2016, 18, 9883
- J.W. Long, D.R. Rolison, and M.S. Logan, Magneto-Mechanical Deformations of Porous Magnetic Iron Oxide, Nanoarchitectures, U.S. Patent #7,754,085
- Brian J. Melde, Brandy J. Johnson,* and Paul T. Charles, Mesoporous Silicate Materials in Sensing, Sensors 2008, 8, 5202-5228
- Dmitry A Kozak, R. Andrew McGill, Todd H Stievater, Robert Furstenberg et al, Infrared spectroscopy for chemical agent detection using tailored hypersorbent materials, Proceedings of SPIE Volume: 9482, Article #: 94820E 2015. DOI: 10.1117/12.2177571

T&E Team Background Presentations

**Naval Research Laboratory & Edgewood Chemical Biological Center
Intelligence Advanced Research Projects Activity**



Office of the Director of National Intelligence

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Doing Business with IARPA

Mr. Tarek Abboushi, Chief Acquisitions Officer
Intelligence Advanced Research Projects Activity



Office of the Director of National Intelligence

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INTELLIGENCE ADVANCED RESEARCH PROJECTS ACTIVITY (IARPA)



Ithildin Proposers' Day Agenda

Time	Topic	Speaker
8:00am – 9:00am	Arrival, Badging	
9:00am – 9:15am	Logistics, Proposer's Day Goals	Dr. Kristy DeWitt Program Manager
9:15am – 9:30am	IARPA Overview	Dr. Lee Knauss Chief, Technology Transition
9:30am – 10:00am	Ithildin Technical Overview	Dr. Kristy DeWitt
10:00am – 10:20am	Ithildin BAA Overview	Dr. Kristy DeWitt
10:20am – 10:30 am	Break	
10:30am – 11:10am	T&E Team Background Presentations	T&E Team
11:10am – 11:30am	Doing Business with IARPA	IARPA Acquisitions
11:30am – 11:40am	Break	
11:40am – 12:00pm	Q&A Session	
12:00pm – 1:00pm	Lunch – on your own	
1:00pm – 2:00pm	5 Minute Capability Presentations	Attendees (No Government)
2:00pm – 4:00pm	Poster Session and Teaming Discussions	Attendees (No Government)



Doing Business with IARPA - Recurring Questions

- Questions and Answers (<http://www.iarpa.gov/index.php/faqs>)
- Eligibility Info
- Intellectual Property
- Pre-Publication Review
- Preparing the Proposal (Broad Agency Announcement (BAA) Section 4)
 - Electronic Proposal Delivery (<https://iarpa-ideas.gov>)
- Organizational Conflicts of Interest
(<http://www.iarpa.gov/index.php/working-with-iarpa/iarpas-approach-to-oci>)
- Streamlining the Award Process
 - Accounting system
 - Key Personnel
- IARPA Funds Applied Research
- RECOMMENDATION: Please read the entire BAA



Responding to Q&As

- Please read entire BAA before submitting questions
- Pay attention to Section 4 (Proposal & Submission Information)
- Read Frequently Asked Questions on the IARPA @
<http://www.iarpa.gov/index.php/faqs>
- Send your questions as soon as possible
 - Ithildin BAA: **dni-iarpa-baa-17-04@iarpa.gov**
 - Write questions as clearly as possible
 - Do NOT include proprietary information



Eligible Applicants

- Collaborative efforts/teaming strongly encouraged
 - Content, communications, networking, and team formation are the responsibility of Proposers
- Foreign organizations and/or individuals may participate
 - Must comply with Non-Disclosure Agreements, Security Regulations, Export Control Laws, etc., as appropriate, as identified in the BAA



Ineligible Organizations

Other Government Agencies, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and any organizations that have a special relationship with the Government, including access to privileged and/or proprietary information, or access to Government equipment or real property, are not eligible to submit proposals under this BAA or participate as team members under proposals submitted by eligible entities.



Intellectual Property (IP)

- Unless otherwise requested, Government rights for data first produced under IARPA contracts will be UNLIMITED
- At a minimum, IARPA requires Government Purpose Rights (GPR) for data developed with mixed funding
- Exception to GPR
 - State in the proposal any restrictions on deliverables relating to existing materials (data, software, tools, etc.)



Pre-Publication Review

- Funded Applied Research efforts, IARPA encourages:
 - Publication for Peer Review of UNCLASSIFIED research

- Prior to public release of any work submitted for publication, the Performer will:
 - Provide copies to the IARPA PM and Contracting Officer Representative (COR/COTR)
 - Ensure shared understanding of applied research implications between IARPA and Performers
 - IARPA PM decides on approval for release or receiving courtesy copy



Preparing the Proposal

- Note restrictions in BAA Section 4 on proposal submissions
 - Interested Offerors must register electronically IAW instructions on: <https://iarpa-ideas.gov>
 - Interested Offerors are strongly encouraged to register in IDEAS at least 1 week prior to proposal “Due Date”
 - Offerors must ensure the version submitted to IDEAS is the “Final Version”
 - Classified proposals – Contact IARPA Chief of Security
- BAA format is established to answer most questions
- Check FBO for amendments & IARPA website for Q&As
- BAA Section 5 – Read Evaluation Criteria carefully
 - e.g. “The technical approach is credible and includes a clear assessment of primary risks and a means to address them”



Preparing the Proposal (BAA Sect 4)

- Read IARPA's Organizational Conflict of Interest (OCI) policy:
<http://www.iarpa.gov/index.php/working-with-iarpa/iarpas-approach-to-oci>
- See also eligibility restrictions on use of Federally Funded Research and Development Centers, University Affiliated Research Centers, and other similar organizations that have a special relationship with the Government
 - Focus on possible OCIs of your institution as well as the personnel and subcontractors on your team
 - See Section 4: It specifies the non-Government (e.g., SETA, FFRDC, UARC, etc.) support we will be using. If you have a potential or perceived conflict, request a waiver as soon as possible



Organizational Conflict of Interest (OCI)

- If a prospective offeror, or any of its proposed subcontractor teammates, believes that a potential conflict of interest exists or may exist (whether organizational or otherwise), the offeror should promptly raise the issue with IARPA and submit a waiver request by e-mail to the mailbox address for this BAA at **dni-iarpa-baa-17-04@iarpa.gov**.
- A potential conflict of interest includes but is not limited to any instance where an offeror, or any of its proposed subcontractor teammates, is providing either scientific, engineering and technical assistance (SETA) or technical consultation to IARPA. In all cases, the offeror shall identify the contract under which the SETA or consultant support is being provided.
- Without a waiver from the IARPA Director, neither an offeror, nor its proposed subcontractor teammates, can simultaneously provide SETA support or technical consultation to IARPA and compete or perform as a Performer under this solicitation.



Streamlining the Award Process

- Cost Proposal – we only need what we ask for in BAA
- Approved accounting system needed for Cost Reimbursable contracts
 - Must be able to accumulate costs on job-order basis
 - DCAA (or cognizant auditor) must approve system
 - See <http://www.dcaa.mil>, “Audit Process Overview - Information for Contractors” under the “Guidance” tab
- Statements of Work (format) may need to be revised
- Key Personnel
 - Expectations of time, note the Evaluation Criteria requiring relevant experience and expertise
- Following selection, Contracting Officer may request your review of subcontractor proposals



IARPA Funding

- IARPA funds Applied Research for the Intelligence Community (IC)
 - IARPA cannot waive the requirements of Export Administrative Regulation (EAR) or International Traffic in Arms Regulation (ITAR)
 - Not subject to DoD funding restrictions for R&D related to overhead rates

- IARPA is not DoD



Disclaimer

- This is Applied Research for the Intelligence Community
- Content of the Final BAA will be specific to this program
 - The Final BAA is being developed
 - Following issuance, look for Amendments and Q&As
 - There will likely be changes
- The information conveyed in this brief and discussion is for planning purposes and is subject to change prior to the release of the Final BAA.



Point of Contact

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Intelligence Advanced Research Projects Activity
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Electronic mail: dni-iarpa-baa-17-04@iarpa.gov
(include **IARPA-BAA-17-04** in the Subject Line)

Website: www.iarpa.gov

Questions? Please fill out cards.



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Q & A Session

Dr. Kristy DeWitt, Program Manager
Intelligence Advanced Research Projects Activity



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